

## **Claims**

I claim:

1. An antenna feed assembly comprising:
  - a dipole;
  - a reflector; and
  - at least one bandpass filter element between said dipole and said reflector.
2. The antenna feed assembly of claim 1, wherein said dipole antenna is constructed on a substrate, and wherein said bandpass filter elements comprise conductive traces fabricated on said substrate.
3. The antenna feed assembly of claim 2, wherein said substrate comprises a printed circuit board.
4. The antenna feed assembly of claim 2, wherein said at least one bandpass filter comprises a material selected from the group consisting of metals and semiconductors.
5. The antenna feed assembly of claim 4, wherein said at least one bandpass filter comprises a metal selected from the group consisting of copper, brass, aluminum, and gold.

6. The antenna feed assembly of claim 2, wherein said at least one bandpass filter element comprises a first bandpass filter element and a second bandpass filter element.

7. The antenna feed assembly of claim 6, wherein said first and second bandpass filter elements are elongated rectangles parallel to an edge of said dipole.

8. The antenna feed assembly of claim 6, wherein said at least one bandpass filter element has a bandwidth of approximately 2400 MHz to approximately 2500 MHz.

9. A planar antenna feed assembly comprising:

a substantially planar substrate;

a dipole and a reflector provided on said substrate;

a first bandpass filter element provided on said substrate between said dipole and said reflector;

a second bandpass filter element provided on said substrate between said dipole and said reflector;

10. The planar antenna feed assembly of claim 9, wherein said dipole has a width  $W_D$  and a length  $L_D$ ; said first bandpass element is an elongated rectangular having a length  $L_1$ , a width  $W_1$ , and a center line located  $S_1$  from the centerline of said dipole; said second bandpass element has a length  $L_2$ , a width  $W_2$ , and a center line located  $S_2$  from said dipole; and wherein:

$L_1/L_D$  is approximately 1.00;

$S_1/L_D$  is approximately 0.4;

$S_2/L_D$  is approximately 0.20; and

$L_2/L_D$  is approximately 0.5.

11. The planar antenna feed assembly of claim 10, wherein  $W_1/W_D$  is approximately 0.18, and  $W_2/W_D$  is approximately 0.23.

12. The planar antenna feed assembly of claim 9, wherein said at first and second bandpass filter elements implement a bandpass filter having a bandwidth of approximately 2400 MHz to approximately 2500 MHz.